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A JOURNAL OF HORTICULTURE LANDSCAPE ART AND FORESTRY

OCTOBER 28 1891

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Garden and Forest.

Among the contents of next week's issue (No. 193) will be the following articles:

The American Buckeyes. (With illustration.)
EDITORIAL.

A Delayed Frost.
EDITORIAL.

Holiday Notes in Switzerland.
By GEORGE NICHOLSON.

The Ferns of Mexico.—III. (Illustrated.)
By C. J. PRINGLE and GEORGE E. DAVENPORT.

The paper will contain an illustration of the California Buckeye (*Æsculus Californica*), from a photograph, and one of Notholæna rigida, from a drawing by Mr. C. E. Faxon.

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The Effect of Gardening upon the Mind.

A TASTE for gardening is one of the elemental impulses of humanity. There are individuals without it, as there are people without sight or hearing or a sense of smell; but, on the whole, to dig comes naturally to man, and at some time or other in the course of his existence the desire to own a portion of the earth's surface is apt to seize upon him and demand satisfaction.

This impulse is of maturity rather than of youth, for gardening in its larger sense is a thoughtful pursuit, appealing to the broader qualities of the understanding. It is not merely the desire for healthful exercise which stirs a man, but also the wish to learn the secrets of our common mother, to force her hand, as it were, and compel her to reward his toil. The fable of the giant Antæus, who renewed his strength when he came in contact with the earth, has a subtle meaning, for it is by this contact that many weary souls have found rest and arisen refreshed.

To him who is tired of mankind the solitude and peace of a garden have a rare charm. Many a great statesman has turned from the cares of state to till his fields, or cultivate his flower-beds and trees, his alert brain finding full range for its activity in some scheme of landscape, or some great project for fertilizing a barren waste and rendering it productive.

Gardening gratifies the thoughtful mind, because it does not look for immediate results. It inculcates patience in all its teachings—patience not only with processes, but with results, for disappointments have often to be met; the best of schemes fail of accomplishment; new enemies arise on every hand, visible and hidden. To combat them requires perseverance, fertility in resource, promptness in action.

The gardener's life can never be purely contemplative. However fair his domain, he must perforce keep his eyes open in it, and his mind active. Vigilance must be his attribute, or he will have cause for regret. By watching he learns what to do and what to leave undone, the habits of the plants he tends—their needs, their uses, the different phases of their beauty. Unconsciously he becomes educated, and his mind lays up new stores of facts and deductions for future use.

The planter also grows in unselfish zeal as his plans increase in scope. He prepares for the future race, not alone for his own joy. The trees he disposes for another generation to sit under; he plants timber for the heir to cut; he adds to his broad acres that he may leave them to his children. For himself the toil, for others the fruit of his labors, and thus, setting aside his own recompense, he comes into a larger manhood, into that fullness of life which only belongs to him who has forgotten self and lives for an end he cannot hope to see.

From all this training should result endurance of unavoidable evils, fortitude in disappointment, serenity of mind. Thus the garden shows itself to be a school of the higher virtues, of patience, of tranquillity, of vigilance, of fortitude, of unselfishness and high serenity.

More lessons than these it teaches, therefore small wonder that the groping soul of man, ever seeking higher things, turns to this simplest pursuit as a child to its mother, finding in her arms comfort for his unrest. Unconsciously he seeks this school, which is so great a help to his spirit, and thinks often it is the pure air and exercise alone that have given tone to his nerves, and fresh vigor to his understanding.

But, after all, the best thing the garden does for man is to imbue him with a love for home, to anchor him to that one spot of the earth's surface which he calls his own, and to which he can impart some portion of his own individuality. The acres he has tilled, the garden-plot he has watered, will always be dear to him and to his children, and it is this desire for a home and an inheritance for those who shall come after him, that drives him to the purchase of land and the beginning of agriculture.

A man who owns a freehold in his country becomes of account at once; it lifts him from the position of a transient into the dignity of a resident; he gives hostages to fortune; he becomes an established citizen in place of a possible tramp, and is of more value in the community forthwith. The effect upon himself is elevating and composing. It stills his restlessness, allays ennui, turns the current of his mind into new channels, provides him with an amusement for his leisure hours, while giving occasion for healthful exertion, as well as stimulating wholesome thought. It is opposed to morbidness, it forbids subjectivity, it rouses the imagination, and gratifies the love of beauty.

There is that fine largeness of quality in it as an amusement that appeals to the simplest minds, as well as to the most comprehensive. It is this which proves that it is elemental and human to love a garden, to enjoy the soil, to find comfort in watching the development of plants and trees, and joy in their blossom and fruitage.

In America we need just this to give us stay and balance. In the older world, where habits are more established, the taste is strong. Here it is overgrown by many things. In so great a land as ours one portion of the soil seems not enough for the citizen. He wants a ranch in Colorado, an Orange-grove in Florida, a sea-side home on the coast of Maine, in addition to his city dwelling. But as the crowd increases and the nation ages, more and more will men concentrate their energies upon one spot, and the love of home and locality will grow more intense, as it is apt to do in the human being as years bring greater quiet to his spirit, and make rest his choicest blessing.

When we are at last sure that our children will be content to reap what we have sown, to repose under the trees that we have planted, solidity and peace will come to us, and life will grow more simple and more pleasurable to our people. Then will the garden be the true pleasure-ground, and its wise stillness will pervade the character of the men who find its culture a real education, and there

learn the needed lessons of perseverance, and patient waiting for the good the future brings, leading lives without hurry, full of calm interest in their surroundings, and with no wish for change.

Village Improvement Societies.

At the recent annual meeting of the Beverly (Massachusetts) Improvement Society, Professor Goodale, of Harvard University, made a few remarks relative to the work of village improvement societies in general. He said that the range of plants used for decorative purposes in the northern states can be much widened. It is a general principle in vegetable physiology that many plants thrive much better when transferred to climates and soils similar to, but not identical with, those of their nativity. This is illustrated in a striking, but unfortunate, manner by the common plants which have invaded parts of Australasia. The thistles and brambles attain a size and vigor unknown in their former home in the Old World, while one of the Roses, well known as Sweet-brier, runs riot over large areas. It is a familiar fact that all of our troublesome weeds in the northern Atlantic states, with perhaps one or two exceptions like Rudbeckia, or Purple Cone-flower, are intruders from other countries, chiefly Europe and South America. On the other hand, the weeds of German gardens and agricultural lands are said by Professor Drude, of Dresden, to be mostly from the Mediterranean regions, but the invasions in the uncultivated districts are largely from America, such as Œnothera, the Evening Primrose, Mimulus, the Meask-flower, and Rudbeckia, just mentioned. Every one knows how admirably many of the Japanese and Chinese species of flowering plants grow in the Occident. This list of plants can be largely augmented particularly in the direction of arboreous and arborescent vegetation. We who live so near the Arnold Arboretum, at Forest Hills, only an hour's ride from this room, can see, if we choose, the progress of experiments directed toward this end. On those ample grounds, one can see for himself the oriental plants which are proving of worth here, and he can make his own selections of plants for the adornment of the streets of our villages. A little pressure brought to bear upon our enterprising nurserymen would increase the scope of their catalogues, adding thereto plants of promise from the eastern countries, China and Japan. Those which we now have in general use are favorites; the list should be lengthened.

Dr. Goodale spoke also in regard to the desirability of preserving some accessible nooks and corners for our native plants. Such shelters need hardly more than a supply of water to help their guests through the hard times of drought which are sure to come at intervals in our climate, and which are exceedingly destructive to transplanted vegetation. If these sheltered nooks are occasionally cleared from the ever-watchful and aggressive invading weeds they can be made to brighten many a spot which would otherwise be unsightly. Essex County has a high reputation for the attractiveness of its native vegetation. This reputation is very largely due to the fact that the county has long possessed ardent and successful students of botany. From Cutler's time, through that of Oakes and Russell, down to the present, when Robinson and Sears and many others have taken up the agreeable task, the attention paid to the native plants of the county has been remarkable. The results of this attention are partly treasured in the excellent collections of the Peabody Academy, in Salem, and are practically at the command of any citizens of the county. There is no excuse here for not making much of our native plants. Other counties in the Atlantic states ought to emulate the example of this county.

Another of the topics taken up by the speaker was the change which has come over the manner of looking at certain features of plant-life. The relations of the soil to water and air, and to the chemical substances which form the so-called ash-constituents of plants, are among the most interesting subjects in nature. The plant stands midway between inorganic matter and animal life, manufacturing from water and what we may well call "impurities," of various kinds, organic and organized substance, part of which is utilizable by animals as food. Of late years we have come to believe that through the agency of infinitely minute organisms, known as microbes, part of the nitrogen in the air, clinging to soil, may be combined with other elements in such forms as to be available to plants.

Another change which has taken place in our method of looking at plants comes from conclusive evidence that all the living matter in the plant is connected together, even where the cell-walls seem at first to be closed partitions; and thus all portions of the plant are constituents of a community, in the strictest sense of the term. Formerly it was held that the conjoined organs and contiguous cells throughout the organism are parts of a corporate body. This true view is rendered more impressive by the conviction that all the living matter in all parts of the plant makes up a united whole.

Other topics discussed were, the principles which underlie pruning and the healing of wounds, the times for transplanting and similar practical matters.

Dr. Goodale expressed the view that the interest in practical questions like these, which come naturally before a village improvement society, can be much increased by occasional meetings during the winter, when, by a suitable division of labor, the freshest intelligence relative to advance in vegetable physiology and horticulture can be presented by the members and familiarly discussed.

Great Hill: A New American Country-seat.—II.

From the north side of the house at Great Hill we look over the lawn, already described, which is bounded on two sides by woods, and on the third by the sea; and the woods continue, running near the west side of the house, down to the water's edge on the south. Here the main front looks over a still larger lawn, comprising some eight or ten acres, while a narrower expanse of sward lies between the building and the eastern shore. Thus the lawns, taken as a whole, are flanked on two sides by forest and on two by blue water. The whole expanse they now cover was, a few years ago, a tangled mass of bushes and stones and little trees, with here and there a few of larger growth. The labor of clearing was great, but, fortunately, the slopes were naturally beautiful. A straight gravel walk leads from the east door to a stone pier; but on the south the main stretch of lawn is not cut, but encircled by paths, one lying close to the forest on the right and the other not far from the water on the left. All along the water's edge is a low growth of shrubs, vines and flowers, chiefly Sumachs and Golden-rods, which make a beautiful border when autumn approaches. The walk near the water passes at a little distance from the house through an irregular group of trees, small Oaks and tall gnarled old Tupelos, the latter forced by the denser growth that once surrounded them into a shape so unlike that which is typical of the species that it needs a close examination to prove them what they are. Otherwise, the lawns are unbroken, save for a few small Oaks and Pines, left here and there in well-chosen positions, which, with the lapse of time, will become interesting trees. The lawns are not so smooth and velvety as those one finds at Newport or Lenox, but for this very reason are all the better in keeping with their surroundings. They are well covered with thrifty grass, and are visibly lawns and not pastures; and their green is bright enough to form a vivid contrast with the blue of the water beyond and the somewhat dusky tone of the Oaks which chiefly compose their bordering woods. Nothing could be simpler than the scene or its arrangement; but its pronounced simplicity constitutes its striking charm. Seldom does one see such broad stretches of sward contrasted with such simple masses of forest and framed in so beautiful a circle of water, with the long line of the Falmouth shore lying against the horizon. No details attract the eye to the disturbance of the general effect of breadth, dignity and repose, and nothing has been done to alter the essential character of the spot as Nature designed it. One would certainly be at a loss where to look for another country place of anything like this size of which it could be said that not a tree or shrub or flower has ever been planted. But this is true of Great Hill, if we except only a few vines which clamber up the piazzas of the house and some narrow flower-beds close to its foundations. Not a tree is in

sight from the house which any one would call a "good specimen," even of wild growth, yet the groups they form are just what the eye demands; and not a spot of color breaks the quiet greenness except where some wild flower grows at the edge of the forest or the Sumachs burn along the water's edge. There are very few owners, I fear, who would not be tempted to set out trees of other species than those which naturally grow here, and to "enliven" the far-stretching lawns with ornamental plants and flower-beds. But a single innovation of this kind would ruin the beauty which now exists, and I can fancy no worse fate for Great Hill than to fall into the hands of an owner with "a taste for horticulture." Any one with a taste for Nature, a taste for beauty developed and clarified but not modified by art, must be thoroughly content with it as it is. May the day be far distant when a white-blotched Negundo or a scarlet Geranium shall intrude upon its broad simplicity and spoil its thoroughly local character.

From the foot of the main lawn one looks westward along a shore which curves out into successive points, clothed with forest to their tips, until, afar off, Bird Island Light shows white against the sky. For the most part there is only a narrow pebbly beach, although, about a mile away from the house, there is a long and broad beach of snowy sand. But these little beaches are, to my mind, as attractive as anything at Great Hill. The forest comes quite close to them, and, the soil being somewhat swampy, it is composed of larger trees than those through which the entrance drive conducted us. And in front of the trees, coming boldly down to the edge of the sand itself, are the most luxuriant masses of shrubs and creepers, bright at every season with a changing wealth of blossoms. Here one sees Willows, Alders and Black Alders, Roses and Cat-briers and Beach Plums, Blueberries and Sumachs and Grape Vines, Wild Azaleas and Andromedas and a score of things besides, crowding one another close and crowding as closely as they can to the water's edge, while now and then they break away to surround a tiny bit of genuine swamp, covered with Cranberry-vines. If a gardener would like to see how a shrubbery should look, edging an expanse of gravel, he could not do better than come and study these which Nature has planted along the little beaches at Great Hill.

All this large property is not given up to mere beauty; but the cultivated tracts and the various farm-buildings are hidden away among the woods, so that one must seek before seeing them; and the same is true of the water tower, which so often mars the effect of a sea-side estate. For a considerable distance from the shore the woods remain untouched save by the construction of a drive, several miles in length, which follows near the water, rounding the head of Wing's Cove and continuing to the confines of the place. In this third drive we have forest and shore views combined. Now we seem to be in the heart of a broad wood, and the next moment find ourselves between the woods and a wide salt-marsh, or between the woods and the water itself. Some very large Pitch Pines and ancient Tupelos occur in this part of the place, and each tree of the sort was scrupulously respected in laying out the road. As its purpose is merely to show the beauty of the place, not to take us anywhere in particular, directness did not need to be considered. And the same is true of certain little walks which, starting near the house, have also been cut through the woods. A pretty feature, which lies only a few steps away from the main lawn but cannot be discovered by a stranger, so inconspicuous is the "trail" through the tall undergrowth that leads to it, is a "deer-rest," made in imitation of those which the deer themselves used to trample out when the forest was wild indeed. It is simply a small circular space which has been freed from everything but grass, above which the trees nearly meet and around which the shrubs, freed from all restraint, have formed, in a couple of years, a high, impenetrable, odorous green wall. The Inkberry had long seemed to me the most beautiful of our native shrubs, but how beautiful it might be I had never realized till I saw it at Great Hill, in some such spot as this.

I need not speak of the other roads which, for more or less utilitarian purposes, have been cut through the woods at Great Hill, or of the pastures where flocks of sheep are feeding, or of the great meadows grown to hay, except to add that nothing, however utilitarian, has been done without a thought of beauty. There has been no ruthless clearing or cutting. The owner marks every tree that is to be felled, and none is ever felled which has any special claim of size, character or situation to plead in its own behalf. So we see here and there in fields and pastures a large Pine, an ancient Cedar or a particularly symmetrical Maple; and I have even been told of one small tract, surrounded by cultivated fields, which remains uncultivated because in the autumn the Gentians grow there in especial profusion. There are Cranberry-bogs also at Great Hill, and wild Grapes and Beach Plums in a profusion by which the housekeeper profits; but while her claims and those of the farmer are respected, Nature's claims are never for a moment forgotten. It hardly need be added that, though there are many workmen at Great Hill, there is no one who calls himself a gardener.

In praising so highly this place, which I have so often visited with ever-growing delight, I do not, of course, mean to set it up as a model for general imitation. Gardens and gardeners, planted trees and cultivated flowers have their part to play in the world, and it must always be a preponderant part when wild country sites are to be fitted for the summer residence of wealthy people. Yet I do think that it would be well if in sea-shore neighborhoods some such treatment as this which has brought the beauty of this place out of a tangled wilderness was adopted. It is adopted, I know, in many small properties; but Great Hill is remarkable as showing how well fitted it is even to estates of unusual size. Certainly, no other method of treatment could have produced so admirable an effect just here, where the forest already existed with a well-marked character of its own, and where the soil is not very easily persuaded to bear trees of other sorts. The chief beauties of Great Hill are its clear local character and its unity. Whether we are traversing the untouched portions of the woodland, following the lovely shore, or surveying the broad expanses of lawn, relieved, but not disturbed, by their Pines and Oaks and Tupelos, and broadly and simply contrasted with the encircling belt of woods, there is never a feature which mars the harmony or changes the general character of the spot. It is simply a piece of the Marion country beautified, but not essentially altered; and this, I believe, whether the gardener has had a part to play in the result or not, is what every country place in every part of the world ought to be. This owner was lucky in finding a spot which he could make habitable and beautiful without a gardener's aid, partly because the unusual, the unexpected, the unconventional is always attractive, but partly also because, when Nature is in an artistic mood, she can do better work than any other artist. But surely, also, the spot was lucky in finding an owner who appreciated his chance and could make the most of it. This he has done, not by starting out with a definite idea of what he "meant to do with the place," but by contenting himself for a time with roughness and incompleteness, living on the place, loving and studying it, and very gradually deciding what the next step should be. And only thus can any good work of art be produced when the materials used are those which Nature supplies, and, consequently, it is impossible to redeem mistakes once they are perpetrated.

Marion, Mass. *M. G. Van Rensselaer.*

Artificial Coffee-beans.

THE manufacture of artificial coffee-beans has, it appears, assumed some importance in this country, and specimens of the spurious beans have been sent to Kew by Dr. Brown Goode, the Secretary of the Smithsonian Institution. The idea of preparing artificial coffee-beans for the purpose of mixing with the genuine beans is, however, not entirely new. As long ago as 1860 coffee-beans, made from finely powdered chicory, were sent to the Kew Museums. The American beans are supposed to be composed of rye-flour, glucose and water; they are made to resemble, in size and color, a moderately good sample of roasted coffee-beans, and, by the introduction of a few genuine beans, are made to possess the aroma of coffee. The modeling is sufficiently good to deceive the ordinary public, but if the product is at all critically examined it is noticed that the groove on the flat surface is broad and shallow, and that it does not extend into the heart of the bean by a long narrow slit as in the real article; and, also, that there is no trace of the silvery skin at the mouth of the slit.

The introduction of spurious coffee-beans as an article of commerce in the United States is described in the following article from the *New York World*, reproduced in the Kew Bulletin:

"The average bulk of the genuine coffee imported into the United States is 8,000,000 bags, or 180,000,000 pounds, per annum. Experts estimate that fully twenty per cent. of the coffee sold to consumers is bogus, which raises the consumption to 216,000,000 pounds. Taking thirty cents per pound as the average retail price, the people of America pay $65,000,000 every year for this one article of food, of which $13,000,000 is paid for roasted and ground beans, pease, rye, or a manufactured article in no way resembling the Brazilian berry. To this must be added the production and sale

of what are called 'coffee substitutes.' So extensive is this business that it is quite safe to say that consumers pay $12,000,000 for what they believe to be cheap coffee. This raises the total expenditure to $77,000,000, and it represents a sale of 276,000,000 pounds, for the 'substitute coffee' usually sells at twenty cents per pound. It will thus be seen that 96,000,000 pounds of bogus coffee are sold in the United States every year, and some estimates place it at 120,000,000 pounds. Taking the lowest figures, $25,000,000 are received for substances which can be profitably placed on the market at six cents a pound. The manufacturers, therefore, receive $6,000,000 for their goods, while retailers gain a profit of $18,000,000. There are two kinds of bogus coffee, an imitation bean and the ground article. The bean is the most difficult to produce, and it is only recently that actual success in this direction has been attained. The bogus bean must not only look like the genuine berry when raw, but it should be capable of taking a proper color when roasted. A very good specimen is now manufactured in Philadelphia and Trenton, being composed of rye-flour, glucose and water. The soft paste is then moulded and carefully dried. To the eye of an expert the presence of this imitation is easy of detection, and it cannot be used to any great extent among wholesalers. But when coffee goes to the retailer adulteration begins. Sometimes the retailer is deceived, but nine times out of ten he is the one who introduces adulteration. The ground article is very easily produced in the proper color, and an aroma is infused by using strong decotions of coffee-essence.

"When mixed with real coffee even the expert eye and tongue may be deceived, while to the ordinary consumer it seems to be the genuine product. Bogus coffee-beans have only a slight resemblance to the natural berry, for though they possess proper form the cicatrice on the inner face is too smooth. Then, again, the gray color of the raw bean is not quite up to the mark, but when these manufactured beans are roasted with five per cent. of genuine coffee they find a ready sale. These bogus beans can be made at a cost of $30 per 1,000 pounds, and when mixed with fifty pounds of pure coffee the whole 1,050 pounds cost $37.50, or 3¾ cents per pound, so that a profit of nearly 100 per cent. is the result. There are any number of 'coffee substitutes,' the Hillis variety being the most successful. This company is already manufacturing 10,000 pounds per week, it being sold by the barrel to retailers in nearly all of the New England, middle and western states. The profits of this concern are supposed to be $300 per day, and its operations have reached such a scale that the stockholders were recently offered nearly $1,000,000 for their secret and business, but it was declined. No one accustomed to coffee-drinking would imagine that a decoction of this stuff was like either Mocha or Rio, but when mixed with four times its bulk of genuine coffee only an expert could detect the imposition. The manufacturers of these 'coffee substitutes' claim that they are not violating the law of adulteration of food-products, because they do not sell their goods as coffee, but simply as a substitute. While this may be true, it does not apply to the retailer, who mixes the bogus stuff with good coffee, and sells the whole as the genuine article. Though manufactories may be beyond the penalties of the adulteration law, they should be suppressed, for without them coffee adulteration by retailers would be impossible. When it is remembered that American people are compelled to pay $25,000,000 for ingredients that can be manufactured for one-fifth the sum received by coffee-growers, the necessity for the suppression of this nefarious trade is apparent. Oleomargarine cannot be sold as butter, neither should 'coffee substitutes' be made to masquerade under the name of Java, Mocha or Rio."

The production of artificial coffee has also received some attention in Germany, where an imperial decree has been issued forbidding the manufacture and sale of the machines for producing the artificial beans, which certain German newspapers have recently advertised. These artificial German beans are not intended in themselves as a beverage, but are to be used in trade for mixing with the genuine article.

Notes on the Distribution of Some Kansas Trees.—III. The Oaks.

KANSAS is credited with ten species of Oak, five of which are confined to the extreme eastern portion of the state. Only those having a more extended range will be mentioned in this paper. The most widely distributed, as well as the most valuable Oak of the state, is the Bur Oak (*Quercus macrocarpa*). This is found throughout the eastern counties and extends to the north-west as far as Bow Creek, a branch of the Solomon River, in Rooks and Phillips counties. From here the line of its western limit may be traced in a south-easterly direction to the Arkansas Valley, and along that stream out of the state in Sumner County. A noticeable feature in the distribution of this Oak is, that it is found in greatest abundance, and, at its best, developed on small tributaries instead of the main streams, and often the best growth will be well toward the head of a branch where the bends are small and the bottoms narrow. The rich deep soil of these bits of bottom-land seems better suited to its growth than the more sandy rich bottoms of the rivers.

Along the Solomon River five groves of this tree may be seen at the junctions of the most of its tributaries, and further up the valley, where there is little or no Oak-timber to be seen on the river a few miles back in the hills, on some small creek we may find scattering gnarled old trees, with short trunks and rugged, angular limbs, while among them will be thrifty young trees, just the size for good fence-posts, either single cuts or quartered. These young trees the traveler of twenty years ago will remember as only straggling bushes, springing up perennially as the fires burned them down. Others still younger are pushing out on the borders, the product of acorns dropped since the buffalo ceased to cut his sharp paths down the hills to water. Further east the older trees are found to be of better length of trunk and straighter grain, though, like the Cottonwood, the best of them have been hauled to the steam saw-mills years ago.

Occasionally one finds a block of the original growth which has escaped the axe; such a one may be seen on the head of Cedar Creek, a small tributary of the Blue from the east, a few miles from Manhattan. Here in an area of not more than an acre, thickly grown with a variety of hard-wood timber, I measured twenty Bur Oaks which averaged ten feet in girth at two feet from the ground and twenty feet to the first limb. The largest of these was fifteen and a half feet around. At present the home market for such timber is much better than it is for Black Walnut, Oak being in great demand for bridge-planking.

Next in an extent of area as well as in size comes the Chestnut or Chinquapin Oak (*Q. prinoides*). This finds its western limit in the lower valley of the Republican River, in Clay County, and on the Smoky for a short distance above its junction with the Republican. This Oak is more commonly found on high ground, often covering the steep faces of the bluffs fronting the streams, where it becomes dwarfed in habit, sometimes only a mere bush, sprouting from a spreading gnarly crown as often as swept over by the fires. Close to the small streams and in the bottoms, where the soil is rich, it occasionally becomes a stately tree. On the banks of the Blue River opposite Manhattan a group of these trees has been jealously guarded by their owner, who was one of the earliest settlers. Five of them which I measured averaged slightly less than ten feet in circumference at two feet above the ground, the largest being twelve feet and eight inches in girth. The wood of this Oak is tough and heavy, and, though cracking badly as it seasons, it is highly valued for posts and fuel. Occupying as it does the stony land and the narrower draws and ravines, there is not the inducement to clear the land for farming purposes, which causes the slaughter of so much valuable hard-wood timber. As there seems to be no basis upon which to separate the form called *Q. Muhlenbergii* by Dr. Engelmann from the smaller and more shrubby growth of the hill-sides, I have preferred to consider them all under the name given above.

Less widely distributed, but more abundant in its region, is the Black Jack (*Q. nigra*). In the eastern part of the state this is abundant, constituting the greater part of the scrubby growth which covers many miles of broken upland. As a mere bush it often crowns some rocky bluff or dots its steep sides; again, it is a dwarfed tree, growing in almost impenetrable thickets; in the more fertile soil bordering the bottoms it becomes a rugged, knotty tree of sometimes two feet or more in diameter and fifty feet high. Whatever the size, it varies but little in character. Its bright red young leaves make a beautiful picture when they are opening. These, as they develop, become thick and leathery, shining dark green above and russety downy beneath, presenting a handsome appearance throughout the season. While maintaining their general wedge-like form, these leaves are exceedingly variable in the number and depth of their lobes, and trees of the extreme forms might readily be mistaken for distinct species if judged by this characteristic only. These leaves, tan-colored and dead, rustle on the twigs till the buds begin to swell in the spring. The bark of the trunks is black, finely checked and rough, shading off to the smooth iron-gray of the limbs, which are

closely set and stiff. With the numerous dead spines and stubs they promise sure destruction to the clothes of any one rash enough to try to climb them.

The most westerly upland growth of this tree is found covering the hills north of the Kansas River in southern Pottawattomie County. It crosses the Blue and is found in considerable numbers along the deeply cut ravines which enter this stream from the west, but this is the limit. I have found no trace of it on the Kansas or any of its tributaries above the mouth of the Blue. The Black Jack affords a fair article of fuel, but is of little value for mechanical purposes.

Closely associated with this species in distribution are the Black Oak (*Q. tinctoria*) and the Red Oak (*Q. rubra*). Of these the Black Oak more nearly resembles the Black Jack in the rough checked appearance of its black bark. It is a larger and better formed tree, and the thinner, deeply lobed leaves will at once distinguish it.

The Red Oak is by far the finer tree, and the iron-gray color and smoother appearance of the trunk, the lofty habit and fine open top, as well as the large acorns with flat shallow cups, and the slightly lobed leaves, readily distinguish it from the others. These three members of the Black Oak family all find their western limit along the west bank of the Blue River in Riley County.

Another member of the Oak family is worthy of mention as occupying about the same limits as the above-named Oaks.

Fig. 79.—Senecio Heritieri.—See page 510.

The *Ostrya Virginica* is found along the Blue and the Kansas and its tributaries to a few miles west of Manhattan. It occurs mostly in secluded rocky ravines along the breaks of the limestone bluffs, and nowhere attains the size to which it grows in the moist woods of Minnesota. Specimens of more than eight inches in diameter and twenty or thirty feet in height are rare in this range.

It is at least a curious coincidence that the field occupied by these last-mentioned trees is nearly identical with that of the glacial drift in north-eastern Kansas. Whether this may have been the cause of their distribution over this limited area only must be purely a matter of speculation, but the fact that these species are so common in Nebraska and Minnesota over the glacial territory would at least be suggestive.

Kansas Agricultural College. *S. C. Mason.*

New or Little-known Plants.

Senecio Heritieri.*

THIS plant was in cultivation at Kew more than a hundred years ago, having been sent thither from Madeira, presumably by the Kew collector, Philip Masson. A figure of it was published by Curtis in the second volume of the *Botanical Magazine*, t. 53 (1787), where it is stated to have been introduced from Africa, but it is now known to be a native only of Madeira and Teneriffe, where it grows in the fissures of rocks. It belongs to the same section of the sub-genus Cineraria as the Madeiran *S. populifolia* and *S. cruenta;* both of which are also in cultivation at Kew, the last-named being the supposed progenitor of the popular garden Cinerarias.

Wild specimens of *S. Heritieri*, as well as the plant represented in the *Botanical Magazine*, are so much smaller and more sparsely flowered than the cultivated examples of it now at Kew that one might almost declare them to belong to different species. And yet Curtis, writing in the *Botanical Magazine*, stated that, "In the beauty of its blossoms, this species of Cineraria, lately introduced from Africa, by far eclipses all the others cultivated in our gardens." The plant represented in our illustration on page 509 is immeasurably superior to anything seen by Curtis, and although we have many beautiful Cinerarias which were not in cultivation a hundred years ago, I question if *C. Heritieri* does not still surpass them all as a greenhouse plant.

It forms a loose many-branched shrub about a yard high, and by a little pinching and staking it may be made to look like a good specimen Chrysanthemum. The branches are zigzag and thickly clothed, as are also the petioles and under surface of the leaves, with a white felt-like tomentum; the upper surface of the leaves is gray-green. The flower-heads are borne in very large panicles on the ends of the strongest shoots, and in smaller clusters on the weaker branches. Each head is an inch and a half across, daisy-like in form, the ray-florets white and rosy crimson, the disk almost purple. They are exceedingly beautiful in color and most graceful in their arrangement upon the plant; moreover, they emit a powerful violet-like odor, and they remain fresh upon the plant two months if kept in a cool greenhouse. I do not think we have any more beautiful greenhouse flowering-plant at Kew than this, and I can imagine its becoming a universal favorite for all sorts of decorative work.

The cultural requirements of this species are not unlike those of the Chrysanthemum, except that it requires a few degrees more warmth, and it does not appear capable of bearing frost. At Kew it has been grown from cuttings struck in summer and potted in good loamy soil, the final shift being into an eight-inch pot. The plants are kept in a cold house or frame all summer, exposed to plenty of sunlight and watered liberally. They come into bloom in May, and are not out of flower until well on into July. This year a few of the old plants had their shoots shortened back after flowering and were repotted, one being planted in a sunny border. They soon made new growth, and they are in flower again now (September). I am told that in some parts of Italy this Senecio is a favorite summer-flowering plant for borders; I should not be surprised if, in the warmer parts of North America, it proved a good substitute for, or companion to, the Chrysanthemum as a border plant. The group of plants, of which this and *C. cruenta* may be considered the types, are now included in the genus Senecio. To be strictly botanical, therefore, the Cinerarias, which are a feature in almost every greenhouse, should be called Senecios, but I doubt if horticulturists will ever accept this change. If called a Senecio then, *S. Heritieri* would be the correct name for the plant here figured, but if Cineraria is preferred, then it is the *C. lanata* of Lamarck. The true *C. aurita* is a very different plant from this, although the name has somehow got attached to it in the few gardens where it is at present cultivated.

Kew. *W. Watson.*

* *Cineraria lanata*, *Bot. Mag.*, t. 53. (*C. aurita*, Hort.)

Foreign Correspondence.

London Letter.

Insectivorous Plants.—At a recent meeting of the Royal Horticultural Society an exhibition and lecture on Insectivorous or Meat-eating Plants was the special attraction. The exhibition was not as large or comprehensive as was expected, but the lecture, which had been prepared by Mr. Lindsay, curator of the Royal Botanical Gardens at Edinburgh, was full of interest, both for botanists and cultivators. Apart altogether from the extraordinary carnivorous propensities of Nepenthes, Sarracenias, Droseras, Pinguiculas and Utricularias, to a knowledge of which Hooker and Darwin have contributed practically all we know, they have a powerful claim to the notice of horticulturists in their quaint, and, in most cases, decidedly ornamental leaves, besides, in Sarracenia, Pinguicula and Utricularia, in the beauty of their flowers.

The collections of carnivorous plants at Kew are a never-ending source of interest and wonder to visitors, many of whom have heard or read of the "voracious" habits of these plants. I have been asked for the "Colra plant, which had leaves like a Colra and could swallow rats whole," and found that Darlingtonia was the plant meant; I have also heard many visitors declare that these plants "were so dangerous to children and venturesome people that they had to be kept behind wire screens at Kew." Without trespassing into the region of romance the habits and specialized structure of insectivorous plants are scarcely equaled in the whole vegetable kingdom. It is perfectly true that they entrap and digest insects, that they derive nourishment thereby, and, in this respect, are on an equal footing with the animal kingdom. No botanical garden or teaching garden of any kind ought to be without a collection of these wonderful plants. It scarcely needs to be added that there are no good gardens in which Nepenthes, Sarracenias and Droseras do not find a place.

New Orchids.—*Cattleya intermedia*. var. *alba*, is a beautiful addition to Albinos. The type is one of the best of autumn-flowering Orchids and is very easily cultivated. Mr. Stalter, of Manchester, exhibited a plant in flower of the white variety last week, and it was awarded a first-class certificate. *Grammatophyllum Seegerianum* was shown in flower by Messrs. Seeger and Tropp, who introduced and named this species last year. It belongs to the same set as *G. Measuresianum* and *G. Fenzlianum;* indeed, it is not unlikely that the three will prove to be forms of one species. The plant shown bore spikes four feet high, carrying numerous flowers two and a half inches across, not unlike the flowers of *Ansellia Africana*, the color being greenish, with blotches of chestnut, the lip brown.

Cypripedium Antigone.—This is one of the most beautiful of hybrids. It was raised by Messrs. Veitch & Sons from *C. niveum* and *C. Laurencianum*, and it flowered in 1890. It has since passed into the hands of Baron Schroeder, who exhibited it in bloom last Tuesday, when it was awarded a

first-class certificate. The flower is large, well-balanced, and is white, suffused with rose. The flower produced this year is far superior to that of last year.

C. Polletianum.—I noted this last year as a beautiful hybrid which Messrs. Sander & Co. had raised from *C. calophyllum* and *C. œnanthum superbum.* The last-named is one of the choicest of hybrid Cypripediums, but its offspring is generally voted to be a better plant. The flower is very large, with the form of *C. Laurencianum*, the dorsal sepal deep purplish crimson, margined with white and spotted with chestnut. The petals and lip are even darker in color than the dorsal sepal, while the whole flower shines as if varnished.

Kew. *W. Watson.*

Bermuda Potatoes.

THE Bermuda potatoes are all grown in the winter months. The Early Rose and Prolific are used for early planting, and any kind of red Potatoes for the later planting. Of the red kind more Garnets than others are planted.

Red has become by unwritten law the Bermuda trademark, and dealers in New York City do not care to touch a late Bermuda Potato without it be red. Their customers, the grocerymen, say the public do not believe a potato is from Bermuda unless it is red—"that the red soil colors it!"

Many farmers are now, October 15th, planting Early Rose, which will be harvested in from eighty to ninety days after the planting, or about New Year's. When these fields are harvested, the farmer immediately puts in late Onions, and gets two crops in one season.

From now on up to February 15th the farmer will plant potatoes as seems best or convenient, and the harvesting from these successive plantings is kept up to about June 1st. No doubt a northern farmer would be delighted if he could have four months of the year for planting and a corresponding four or five months for harvesting. No one plants after February 15th, as plantings after that date run to enormous tops—sometimes six feet long—but not a tuber will set.

Our potatoes for planting all come from the north, as potatoes grown in Bermuda, and with great care kept over the summer, are almost worthless for planting. Arrangements are made with farmers in Maine, the Adirondack region, Nova Scotia and New Brunswick to grow our red potatoes for planting. Our Early Rose come from New York.

We have great trouble to make these seed potatoes sprout, as potatoes which have gone to sleep in a northern climate, not contemplating an awakening until April or May following, do not readily arouse; they are more inclined to rot than sprout, and it will not answer to put them into the ground until they have sprouted. Probably the most successful way to sprout them is to spread them upon a dry floor for a few days until they are thoroughly dried off from the steamship sweat. Those inclined to rot should be picked out, and the others put back into barrels and kept in a dry warm place. As soon as the eyes begin to show signs of starting the potatoes are cut into pieces with two or three eyes and directly planted in the ground.

The method of planting, after the ground is thoroughly prepared with manure or an artificial fertilizer, is as follows: A garden line is stretched across the field, and a man, following this line, takes each piece of potato and pushes it into the ground some three or four inches. These rows are from eighteen to twenty inches apart, and the potatoes from four to six inches in the row. This is a slow, laborious process, but it is much the best way, as the growth of the Potato here is somewhat different than in the north. There each Potato-plant sends out roots in different directions four or five inches long, and on the end of these rootlets the potato is formed, frequently making a large hill full of potatoes. Here the potato "snugs up" close to the plant, only forming from one to three good marketable potatoes to each stalk. By no known method can the potato be induced to stray away from the stalk, so we strive to have as many stalks or plants to the acre as is possible. After the rows can be seen through the field, men are put in with spading forks, spading carefully between each row, the rows being so close together that a horse cannot be used. A week or ten days afterward the potatoes are hilled up (or, as we say, moulded) by hoe, and nothing more is done with them until harvesting, as the potatoes soon cover in the ground and no weeds can grow.

We do not speak of so many bushels raised to the acre, but so many barrels raised from a barrel of seed. The amount raised is usually from three to six barrels from one barrel planted, though eight and ten are not infrequent. The yield per acre is probably from one hundred to two hundred bushels. If we did not get large prices there would be no profit in this crop.

I give below a statement of account with 115 rods of land (120 rods would be three-quarters of an acre) which I planted in the winter of 1889–90. The planting was at different times, from December 1st to January 5th, and I harvested them from March 27th to April 24th. These were Garnet's late potatoes, and the season was well adapted for potatoes. I bought all the manure and seed and did not do any work myself, and, of course, the workmen did not work hard enough to hurt themselves. I dare say if they had been working on their own crop they would have performed the labor at half the cost. A good Yankee farmer, leading his own workmen, would have realized a large profit from these 115 rods, but in this land of shiftless ways, with a seeming effort to do all things in the slowest way it is possible to find, I made only a fair profit.

An account with 115 rods of land for potatoes in Bermuda Island:

1890.	SALES.		
March 27th.—20 barrels potatoes	$6.72		$134.40
April 10th.—16 " "	6.00		96.00
April 24th.—17 " "	5.28		89.76
May 6th.— 5 " " second size,	3.00		15.00
			$335.16
COST.			
20 loads seaweed (36c.)	$7.20		
63 loads (1 horse) manure ($1.20)	75 60		
		$82.80	
38 bushels seed (96c.)		36.48	
58 empty barrels		11.76	
Labor to grow and harvest		84.98	
			$216.02
Net profit on 115 rods			$119.14

We have our trials from disease in the shape of a fungus-growth, which only attacks the plant-leaves when the potatoes are about half-grown and stops their growth. The disease may start in on one side of the field to-day and in two or three days' time it sweeps over the field, and the tops look as though a killing frost had prevailed. Nothing has yet been found to arrest this disease, so we meekly succumb, hoping for a north-east dry wind to come, which usually delays, but does not wholly stop its progress. We have another pest in the shape of the broken-tailed snail, which eats off the stalk at the base when tender; after the stalk becomes harder no harm is done. The Colorado potato-bug is not known here.

We shipped to American ports in the winter of 1890–1891 80,000 bushels, and we paid into the United States Treasury, in custom tax, the sum of $20,000, which the Bermudian feels to be infamous. We are looking forward with fear and trembling to the results of this winter crop. Under the McKinley law we have to pay into the United States Treasury twenty-five cents custom tax on every bushel we place in the New York market before we can come in competition with the United States farmer, and we fear this will so handicap us that our balance-sheet will show a loss.

Hamilton, Bermuda. *Russell Hastings.*

Cultural Department.

Adaptation to Locality.

NOTHING more important, I think, was brought before the American Pomological Society at Washington than Mr. Garfield's remarks upon the adaptation of fruits to locality. The necessity for this is comparatively but little appreciated, and many men, even those of long experience as fruit-growers, but feebly realize the immense importance to the commercial orchardist of a full understanding of this part of his business. A great number of failures are due to lack of knowledge on this point. In a recent issue of the *Stockman and Farmer*, Mr. R. J. Black, of Bremen, Ohio, illustrated the matter clearly in some remarks about the King of Tompkins County Apple, the Tompkins King of the revised nomenclature. Mr. Black says: "The excellence of this apple in Tompkins County, New York—latitude nearly forty-three degrees—is undoubted, but for planting in the central west it cannot be recommended. In this section it is only a moderate bearer; the fruit is generally imperfect, and it does not keep." Exactly this statement can be made of the Baldwin, as regards limitation of usefulness when grown west and south of New York. It then becomes a fall apple, does not hang well to the

tree, and the quality of the fruit—not high at its best—is much impaired. West and south of the Baldwin's limit the Ben Davis is at home. This apple is unquestionably of wide range, but, although it is hardy farther north than the Baldwin, the season is too short there, and it attains neither the size nor color normal to it in the Ohio and Missouri valleys. In quality this apple, when well grown, is barely good, but out of its range, northward, it is almost worthless. Among long-keeping apples, I know of none having so wide a range as Ben Davis.

Even summer and fall apples do not usually give satisfaction over a large territory, either in latitude or longitude. I think there are almost no real exceptions to this rule among our apples from western Europe and their American seedlings. The Early Harvest has been pretty widely distributed because of its earliness, and it has proved productive almost everywhere, but healthy scarcely anywhere. I venture to say that we are likely to find the tree-fruits that will prove valuable over the widest extent of territory in America east of the Rocky Mountains, among those of Russia and northern Asia. According to the American Pomological Society's list, as shown by the starring, the apples of the widest successful distribution within its territory are the Oldenburgh and Red Astrachan. The latter has more stars than any other apple in the list, and is double-starred for twenty-six states and provinces—extending from New Brunswick to Louisiana. Oldenburgh is double-starred for nineteen states, covering the same range. This, it seems to me, is probably so because the apples of western Europe are not so well suited to eastern America as the apples of eastern Europe and Asia. It is true that many of them have been very successful, and that their seedlings have often surpassed their parents. Nearly every popular apple in America (outside of the Russians) is a native seedling; but excellent as many of them are, nearly every one has a relatively narrow range, both in latitude and longitude.

The Russian tree-fruits are, no doubt, of mixed as well as uncertain origin; but it is probable that many, if not all of them, are either of home or more eastern nativity. They are mostly early in season, and particularly so when brought to this country and planted ten or fifteen degrees southward of their original habitat. But there is good reason to believe that, by growing seedlings from them, with skillful crossing, long-keepers of merit can be produced, adapted to all sections. Some such seedlings are already known. The Pewaukee, which is becoming popular in Wisconsin and Canada, is such a seedling from crossed Oldenburgh seed, and is a fair keeper. The lately introduced North Star, or Dudley's Winter, is said by its producer to be a pure Oldenburgh seedling, he having no other variety on his place. It is a good keeper in northeastern Maine.

It does not surely follow that because these fall Russian apples have a very wide range of adaptation all their American seedlings will resemble them in that respect. But I submit that, in the experience we already have with them and their seedlings, we have encouragement in thinking them to be a promising race of apples, with very acceptable characteristics; and that the growing of seedlings from them, either pure or crossed with valuable winter varieties of the old stock, is worth the attention of our agricultural colleges and experimental farms. Heretofore the progress and improvement of our tree-fruits has been dependent almost wholly on chance, and so long as it depends upon individuals it will probably not be different in the future. But the work of the horticultural departments of our agricultural schools can be made continuous, and may be intelligently and perseveringly pursued to effective results. In thirty or forty years they could provide the country with a series of fruits for all seasons and sections, far more valuable than any we now possess.

Newport, Vt. *T. H. Hoskins.*

Vanda Batemanni.

IT is within five years of being half a century since this magnificent species was described by Dr. Lindley in the *Botanical Register* from a specimen which flowered a year earlier in the collection of Mr. Bateman, that being the first to bloom in England. The plant was discovered in the Moluccas by Gandichaud, who gave it the name of *Fieldia lissochiloides*, from a supposed resemblance to some member of the genus Lissochilus. The resemblance was not strong enough for Dr. Lindley, however, so he ignored botanical etiquette, and, after due explanation, named the plant *Vanda Batemanni*, out of regard for the great authority on Orchid matters. The genus Fieldia has been suppressed, and should not be confounded with Cunningham's mono-typic genus of the *Gesneriaceæ* of the same name which is still in existence. Some species of Vanda, including *V. Batemanni*, were separated from that genus by Reichenbach and given the name of Stauropsis, the one now recognized by such authorities as Hooker and Bentham. But this plant is known only as a Vanda to the great majority of gardeners and nurserymen, and it is highly probable that name will survive for many years to come.

These notes on nomenclature are the result of a careful investigation which followed a recent discussion as to the proper name of a plant of *V. Batemanni* now in bloom at the Harvard Botanic Garden. The specimen referred to has been in bloom since July, and gives promise of remaining in that condition several months longer.

Here is Lindley's graphic description of the plant: "It is a very large erect plant, with remarkably thick ærial roots, produced after the custom of its kindred, sword-shaped, two-ranked hard leaves averaging two feet in length, and a still larger spike of some score of flowers, each full two inches and a half across, flat, leathery and long-enduring. But it is not alone for their size that these flowers are so especially worthy of notice; their color is indescribably beautiful. If you look at them in face, they are the richest golden yellow, spotted all over with crimson; but when seen from behind, they are wholly a vivid purple, fading away at the edges into the violet of *Cereus speciosissimus*, so that, regard them which way you will there is nothing but the gayest and richest colors to be seen."

V. Batemanni should be grown in pots, in preference to baskets, on account of its large proportions. These should be filled to two-thirds of their depth with drainage material, upon which the lower roots may rest, filling up the remaining portion with sphagnum, which may be continued and rounded off two or three inches beyond the rim. The plant enjoys abundant light, and should have a position near the glass; but, notwithstanding this, the fierce sun of an American summer is too much for it, and therefore it should be shaded in bright weather during the warmest months. A high stove temperature and plenty of moisture in the atmosphere and about the roots are indispensable during the greater part of the year. The temperature and atmospheric moisture may be reduced considerably in winter with much advantage, but the sphagnum about the roots should always be kept moist, and it must be replaced by a fresh supply when decay appears.

Cambridge, Mass. *M. Barker.*

Begonia Baumanni was introduced by Messrs. V. Lemoine & Sons, of Nancy, in the fall of 1890, and its flowering has been awaited with much interest, it being the only tuberous Begonia species yet discovered which possesses a distinct, clearly defined perfume. This species is said to have been discovered by Monsieur Sace, of Bolivia, in the central valleys of the Cordilleras and was first described in the *Revue Horticole* in 1886, under the name of *B. de Cochabamba*. The tubers are said to attain the size of a small melon, in some cases weighing twenty-four ounces. In the humid atmosphere of its native valleys the plants assume large dimensions and are in growth and flower about nine months of the year. The small tuber which is now in flower with me scarcely does justice to so vigorous a variety. It rested some six months, breaking in April, and has been grown on the greenhouse bench. It has given one stem, smooth, reddish, and erect about a foot high. The leaves are green, finely seamed and veined, reniform and alternate. The plant bears male and female flowers, carried well above the foliage on long stiff peduncles. The female flower is circular, with five petals. The male is furnished with only four, two of which are only partly developed, as is frequently the case with Begonias making an oval flower. The color is a clear rosy pink of a bluish shade, the female flower bearing a remarkable resemblance to those of *B. Maritani grandiflora*, though when well grown it is said to be three to three and a half inches in diameter.

There seems to be a distinct tendency in the petals to reflex under strong light. Both female and male flowers have a distinct agreeable fragrance, more especially in the morning. The odor is fully as marked as that of *B. odorata* and may be classed as a Tea-rose fragrance. Larger tubers and stronger plants will doubtless give better results, but there can be little doubt that *B. Baumanni* is a valuable acquisition for the Begonia fancier and the hybridizer. Some faint perfume seems to have crept into some strains of hybrid tuberous Begonias lately, but this species will probably add a more distinct odor to its crosses, while its erect habit and stiff peduncles are in the direct line of desired developments.

Elizabeth, N. J. *J. N. Gerard.*

Eulalias.—As single specimens on lawns or used as part of a group of subtropical plants in the summer garden, these

handsome grasses are indispensable. The variety Zebrina, probably the handsomest of all, was once considered doubtfully hardy, but here it stands the winter well, without any protection beyond its own dead leaves, which are burned to the ground in early spring. One of the most effective beds in the English garden at the place of Mr. H. H. Hunnewell is made up of tall-foliaged plants, in which this Eulalia forms part of the group, and it is especially effective in lighting up heavy-foliaged Cannas, Caladiums, and similar plants. The newer *E. univittata*, though not quite so rank a grower as the preceding, is a valuable addition to a not over-large selection of tall grasses. It is quite distinct, and particularly graceful as a lawn specimen. These Eulalias bear handsome plumes late in the autumn, for which alone these plants are cultivated in some parts of the country.

Shrubby Calceolarias.—Though very seldom grown now, as they have been displaced by the showy large-flowered herbaceous varieties, these are, nevertheless, worth a place where handsome pot-plants are required during the early spring months. Though the flowers are smaller, they make up in the quantity produced. They will endure rough treatment, and our plants are shipped to the city during winter, a distance of fifteen miles. Cuttings are struck during the summer, which usually require about two months for the process. These are gradually shifted into eight or ten-inch pots, where they bloom. The flowers vary in color between yellow, red and crimson. Many years ago these were common bedding-plants, but now they are seldom used.

Wellesley, Mass. *T. D. Hatfield.*

Correspondence.

A New Way to Preserve Fruit.

To the Editor of Garden and Forest:

Sir,—In the progress of my experiments in applying heat to the conversion of food-material into nutritious food by the use of the Aladdin oven I have perhaps discovered a new method of dealing with fruit which may be applied even without the oven, although it can more safely and completely be applied in the oven, for the reason that we have in the oven and lamp combined complete control over the heat. After a little experience in the adjustment of the flame of the lamp and of the size of the oven, we may put the heat at not exceeding 200 degrees, Fahrenheit, and maintain it at that point for any length of time. It is due to this complete control, without attention for a number of hours, that we have been able to do the work which I will now describe:

On the afternoon of the 3d of July a large quantity of currants were stemmed and placed in glass jars of the type known as the Mason butter-jars, a jar which holds about a quart, with a very wide mouth, surmounted by a glass cover resting on a rubber ring, and held down by an outer metallic rim which is screwed upon the lip of the jar. After filling the jar with currants the interstices were then filled up with cold water. Eight jars each were then put into two pans which fitted closely in the inner oven, one above the other. These pans were then one-half filled with cold water. The glass cover was placed loosely upon the jars without the rubber rings. The two jars were placed in the oven in the evening, the oven closed, a lamp of moderate power lighted at nine P. M., which gave, according to a registering thermometer, a heat of 200 degrees, Fahrenheit, a simmering, and not a boiling, heat, which has proved to be sufficient to kill any ferment or spores that might have been in the fruit, in the water or in the air.

There was a slight expansion during the night, with a little overflow from the jars into the pan. The pans were then taken out separately in the morning, and while everything was still hot, and had to be handled with gloves, the covers were quickly removed, the rubber rings put on, and then the metallic ring was screwed down. Everything was then left to cool slowly. The process took but a very few minutes.

These currants are now perfectly sound after passing through the dog-days in the store-closet; they have shrunk a little, but evidently no spores have got in, even though the jars are not completely full. When opened they have a finer flavor and as much freshness as if they had been cooked right from the bushes.

On the same day we put up a few strawberries with a little sugar, which kept well, but were so good that they have long since been consumed. I also put up a considerable quantity of cherries with a little sugar, and a few days later a large lot of blueberries and gooseberries. Later we have put up peaches with a little sugar, and tomatoes in their own juice.

In only one or two instances in eight dozen jars has there been any appearance even of mold. In one jar of cherries a little spot of mold appeared upon the surface, but there had been no fermentation; the contents were perfectly sound.

I was led to these experiments by the success of one of my correspondents in making jellies and jams in practically the same way. The fruit was simmered all night with a little sugar, strained in the morning and put up in the jelly jars without any further work being done on it, thus saving the stirring and the discomfort of doing the work over a hot stove.

We have since then put up a large amount of grape jelly and Beach-plum jelly in the same way in my own household. This process saves a great deal of work, a great deal of time and a great deal of discomfort. By not subjecting the fruit to a high degree of heat the natural flavors are not only retained but even developed to a higher degree than common.

I can conceive that this work may be done in other apparatus than the Aladdin oven, but it may require a little more attention in the process, as there does not seem to be any other cooking apparatus in which the heat can be brought to a given point and there maintained for a long period without close attention.

Two of these ovens have been made especially for surgeons, set at three hundred degrees, Fahrenheit, for the purpose of sterilizing surgical instruments, bandages, etc., for which purpose they serve with complete success.

It is possible that this method of dealing with fruit may enable us to secure from tropical countries some of those fruits, in nearly their natural conditions, which, in their ripe condition, will not bear transportation and cannot be preserved in the ordinary way with sugar. A correspondent in Porto Rico is about to try some experiments in this line. I can conceive that absolutely ripe pine-apples, served in this way, might give us a taste of the pine that we do not ordinarily secure in the specimens that we receive from the tropics.

Boston. *Edward Atkinson.*

The Southern Interstate Exposition.

To the Editor of Garden and Forest:

Sir,—This exposition, now in progress at Raleigh, North Carolina, has some features of special interest to students of Horticulture and Forestry. From a number of states the exhibits of woods are good, North Carolina naturally leading in this respect. Some enormous sections of tree-trunks from the western mountains well illustrate the great wealth of that region in hard woods, while many articles of furniture show the beauty of the Maples, Walnuts, Ashes, Sycamores, Cherry and other woods. Among the exhibits from Florida are many products characteristic of that state. Among these a large number of pine-apples, fruited in pots, attract attention. In the North Carolina Agricultural Department there are shown two products illustrating the wide range of climate in the state. Two Palmetto-trees from Columbus County guard the entrance, and between them stands a Balsam Fir, from one of the high peaks of the west. The Palmettos were, unfortunately, simply cut down with an axe, instead of being dug up entire. They are, however, held in an upright position, and show trunks about eight feet high and a foot in diameter, while the beautiful crowns of leaves on their long stalks make the full height over eighteen feet. One who knows the slow growth of these trees cannot help regretting their destruction for a paltry five dollars each. The Florida people could hardly believe that Palmettos grew to such size in so high a northern latitude. Two of the North Carolina counties exhibited alligator skulls larger than anything in the Florida exhibit.

Northern visitors are attracted by the size and beauty of the apples from the western mountain country. The fact is rapidly becoming recognized that western North Carolina is peculiarly the apple region of the United States, and the time is not far distant when the lands of that beautiful region will be sought after by orchardists from other sections. The Scuppernong grape and other varieties of the Rotundifolia class are well represented at the exposition. Several new seedlings are shown. The fact is curious that seedlings from the Scuppernong, which is a russety green grape, are almost invariably black in color. The two leading seedlings are the James and the Alliance grapes. The James is a large black grape, with a thinner skin than the old Scuppernong, and rather sweeter. It makes larger clusters too, sometimes as many as fifteen berries. The individual berries average over an inch in diameter, many being over an inch and a half. One gentleman reported three bushels from four-year-old vines. Baskets of these grapes look like large Damson plums. The Alliance is shown for the first time. It comes from Wayne

County, and in size is simply immense. In color it is a reddish black, and the individual berries are nearly as large as very large Damson plums.

The exhibit of wines from the Scuppernong and its varieties is very fine. There are two large exhibitors—the Tokay Vineyards, of Craven County, and the Garrett Company, of Halifax County. This last company has an annual output of over 80,000 gallons of wine. The Scuppernong wines are rapidly making a name in the markets. The enormous productiveness of these Grapes, and their capacity for making wines of a high grade, will soon make them the leading feature in the horticulture of eastern North Carolina. The James and the Alliance Grapes are both later than the old Scuppernong, and are not fully ripe until the middle of October.

Just outside the buildings of the Exposition the North Carolina Agricultural Experiment Station has thirty-seven varieties of Figs growing, and still full of fruit. These late fruits are smaller than the early crop, but show the characteristics of the varieties well. So far the best sorts seem to be the White Adriatic and San Pedro, but these plants have been cut so hard for propagation that their full value in fruit has not yet developed.

The Oonshin or Satsuma Oranges at this station, on the hardiness of which we base some hope, have made a fine growth this season. We hoped to have specimens of fruit this year, as one of our trees bloomed in the spring, but a deluge of rain at blossoming time destroyed the flowers. The young trees passed one winter without being injured, and should be in a better condition for supporting another winter. Whether they will pass all of our winters unharmed remains to be seen; but the fact is evident that this Orange is destined to move the Orange-belt a good way north.

Raleigh, N. C. *W. F. Massey.*

Vernon Park, Philadelphia.

To the Editor of Garden and Forest:

Sir,—The city councils of Philadelphia passed finally, last week, an ordinance to take possession of the Wister homestead, in Germantown, as one of its small public parks. This is the third of a series which, under Councilman Meehan's efforts, have been placed on the city plan, and which the city proposes to take from time to time in the future. The city long ago reached the limit of its legal right to incur indebtedness. Unfortunately, its loans were created for long periods, and although there is money enough in the sinking fund to pay half its indebtedness, it is considered legally in debt until the bondholders are paid. Philadelphia, therefore, cannot borrow money for small parks, but has to pay for all these and other large public improvements out of a $1.85 tax-rate, and one or two of these small parks a year is all it can venture on.

The small parks are located under the advice of Councilman Meehan, as chairman of a committee in charge of the subject, and, so far as possible, those localities are selected which have some historical associations. Last year the celebrated Bartram's house and garden were acquired, and now Vernon, the Wister homestead, is added. The mansion-house is a fine specimen of colonial architecture, and the six acres of grounds contain many good specimens of trees collected by early botanists in remote localities of our country, as they were at that time. The first specimen of *Magnolia macrophylla* was brought from North Carolina by Kin, a German botanical collector little known, but of wonderful zeal, and the tree is still growing here. There are also magnificent specimens of Oaks, Pines, Ashes, Kentucky Coffee and other trees. This plot, which will be known as Vernon Park, is in the heart of Germantown, which is the twenty-second ward of the city of Philadelphia, and will be a great boon to that community. It is a district now of nearly 50,000 inhabitants, and yet its only piece of public ground was a little plot of about 150 feet square. There was absolutely no place where even a sick child could be taken for an airing except along the public streets.

It is singular that a city of over a million inhabitants should have miles and miles of brick and mortar with not a solitary open space except the half-dozen small ones plotted by William Penn and his immediate descendants, though its one grand Fairmount Park, of nearly 2,000 acres, is some offset to this surprising negligence. The movement for better things, started by Mr. Meehan in 1883, is now very popular, and councils are overrun with applications for small parks from all parts of its 200 square miles of territory. This is the third park actually acquired out of ten located, and it is believed some four more will be located before the end of the present session of the city councils.

Philadelphia has to pay, by order of state legislature, out of annual taxation, nearly a million dollars a year for the huge pile of marble in the centre of the city, known as the Public Buildings. It is believed this heavy expenditure will end in about five years, and there is little doubt, if the present temper of the citizens continues, Philadelphia will then rapidly retrieve its reprehensible indifference to open spaces, so essential in these days to the good reputation of a progressive city.

Philadelphia. *S. A.*

Begonia Vernon.

To the Editor of Garden and Forest:

Sir,—In No. 185 (September 9th) of Garden and Forest we find a short note on the *Begonia semperflorens atropurpurea*, or *B. Nelsoni*.

We beg to be permitted to remark that that variety having been put upon the market by our firm last year, as you will see by the enclosed novelty list, it is but fair that our right as to its exact name be preserved during the first years at least, and we therefore must protest against the name of *B. Nelsoni* given in the above notes.

If you will please refer to the *Journal of Horticulture*, No. 2219, London, 9th April last, you will find a description of that Begonia, of which we beg to send you enclosed a copy, as also its exact name, which is *Begonia Vernon*, or *semperflorens atropurpurea*.

As regards the statement that the markings have not proved constant with Mr. Gerard, "who is inclined to doubt if they will prove so under your hot sun," we presume that that gentleman has not got the right sort, or has grown the plants under glass or in the shade, in which case they indeed do not show off well their bronzed, purple-tinged foliage.

The latter is seen in the best of conditions under our climate when the plants are grown in the full sun—that is, in situations where the sun shines upon them during the greatest part of the day.

Many American florists who saw the plant in our grounds all agreed that it was one of the finest bedding plants introduced of late years.

Paris. *Vilmorin-Andrieux & Co.*

[*Begonia Vernon* is the only synonym for *B. semperflorens atropurpurea*, and until attention was called by the above letter I was not aware that it had unconsciously been given another. The correct name was perfectly familiar to me, having had fifty plants labeled *B. Vernon* before me for months, and I am unable to account for the mental twist which led me to write an irrelevant name in my note. My plants were from Messrs. Vilmorin-Andrieux & Co.'s seeds, and, as suggested, have been grown under glass. It would seem a good plan for the introducers of new plants to note any peculiarities in their offerings, as does not seem to have been done in this case. Had Messrs. Vilmorin printed on their seed-packet or in their list the fact that the leaves of this variety only show their true character in the open, the experiment would have been tried, and probably a less disappointing report have been given. So far the result is, as given by me, a fine form of *B. semperflorens rosea*, with no indication of leaf-coloring. In my notes the intention is to report faithfully what I see in my own garden, not what is read or heard. The first hint as to growing this variety in the open came to me too late in the season for trial, from a friend who saw *B. Vernon* in Paris this summer, and reports it as fully bearing out all claims made for it.—*J. N. Gerard.*]

Periodical Literature.

The fifth number in a series of articles now being published in the *New Review* under the collective title "A Model City; or, Reformed London," is written by Professor H. Marshall Ward, and called "Trees and Flowers." The main question which the author considers is, "Are cities and towns like London, Birmingham, Manchester, Liverpool, etc., so polluted with gases and smoke and so darkened with soot and fog that the existing show of trees and shrubs is the best possible under the circumstances?" and his answer is, that he thinks he can show cause for believing "that the matter has been considerably exaggerated, and that, if the various local authorities were to take into account all the facts, they would come to the conclu-

sion that not only could much more be done, but that it is a national duty to see that much more is done in this matter of increasing the number and variety of trees and flowers in our towns and cities. Very little technical knowledge of the life-processes of plants and the conditions necessary for their welfare is needed to show that different species differ immensely in the degrees of susceptibility to injury by means of small quantities of acid fumes, such as exist in a diluted condition in the smoke passing off from the tall chimneys of a busy manufacturing centre; nevertheless, no tree will withstand the worst of the conditions found in centres of industry which daily give off small quantities of chlorine, hydrochloric acid or sulphurous acid; but then it must not be forgotten that these worst conditions are out of all proportion to the conditions met with in a city like London. Yet it is surprising to see how gallant a struggle for life is kept up by trees like the Balsam Poplar, the Black Poplar, the Alder, Sycamore, and some other trees even in the worst cases referred to." Coniferous trees, the writer continues, are not nearly so well able to stand these conditions, nor can the Oak, the Beech or the Birch long and successfully continue the struggle, though even these put up with more hardships than is popularly supposed. The chief point he wishes to make plain is that, at all events, in the smaller and more open English towns, many more varieties of trees will grow than have yet been tried, and that here, at any rate, "every effort ought to be made to plant some of the many beautiful North American and other foreign trees that can now be obtained and are known to be capable of easy cultivation in such localities. Moreover, there can be no doubt that much is to be done in this direction in London and other large cities in spite of crowded dwellings and periodical fogs."

Professor Ward then points out some causes for the frequent failure of town trees which do not lie in the unsuitability of atmospheric conditions, and his words show that municipal authorities often work in England pretty much as they do in America. Town trees are "fixed, when young, in a hole, probably filled with good soil, and this is carefully covered in, the young trees suitably staked and protected, possibly the soil round the base of the stem covered with a grating, and the result is—failure! True, it often takes several years to accomplish this striking result, but its inevitableness is none the less assured. While the tree is young, and its root-system is reveling in the pocket of good soil, provided with the overhead grating which ensures a supply of rain-water and air, and it may be of manure also, all goes well, and the head of foliage above is able to make the most of what sunshine there is and to manufacture the substances which supply the wood, new buds, new roots, and, possibly, even flowers. But the time comes when the pocket of soil is exhausted by the roots and they put out spreading thread-like rootlets to explore the soil around. And now comes the critical period; these young rootlets are covered with myriads of extremely fine hairs, and these delicate root-hairs are the only organs which absorb the water containing small quantities of substances such as salts of potash, lime, nitrogen, phosphorus, etc., in solution, and they are utterly incapable of performing this work of absorption in the absence of oxygen. Now, what are the usual conditions of affairs in the streets of a town? Even supposing these new spreading rootlets have good soil around them, and soil which is porous and deep, the rule is, that a practically hermetically sealed layer of flag-stones or asphalt lies above them, and their only chances of obtaining water and oxygen are through the grating and soil close to the stem. No doubt, the most is made of this, and the tree goes on for several years, doing better than it would if the flags or asphalt came up close to the stem. How often does it happen, however, that the new rootlets have nothing better to spread in than old brick rubbish or barren gravel; or, far worse, a soil which is saturated with the poison from leaking gas-pipes?"

Even sanitary appliances have an adverse effect upon town trees, for "the neighboring sewers may be taking off, as fast as they can, the water from soil round the roots, or the case may be otherwise, and the stagnant water, standing too long at the roots of the tree, deprives them of the oxygen necessary for their life and lowers the temperature beyond a minimum they could temporarily withstand. What has been stated so far is enough to show that the wonder is not that trees so often fail in the streets of our cities and large towns, but that the interminable and dreary rows of Planes, Elms and Limes that are planted ever come to anything at all." The author then notes the injuries which may come to town trees through the impact of vehicles, the gnawing of dogs and horses and the pranks of boys, and the danger of selecting, for street-planting, trees which send out long, straggling, superficial roots, running just under the pavement or road, because, as these roots thicken with increasing age, they lift up the flag-stones or other pavement, and, becoming a source of damage and danger to the street, are likely to be injured themselves by passing feet and wheels. The comparative brittleness of the limbs of different trees should also be considered before planting; and, after planting, proper methods of pruning or otherwise treating a tree which is in delicate health or has suffered external injury should be determined.

Although, says Professor Ward, for one reason or another, "the Oak, Ash, Birch, Beech and some others of our forest-trees are unsuitable for town-planting, this is no sufficient reason for flooding London with Planes, and Planes only, as if no such trees as Robinias, Laburnums and American Oaks, Ashes, Walnuts, Maples, etc., existed. Moreover, there is every reason to predict success for trees as yet undreamt of as town ornaments. Let those in authority try some of the hardy Magnolias—say *M. acuminata*, probably one of the best town trees—and extend their experiments to such as the Robinia, the Laburnum, the Tulip-tree, the Mulberry, Fig, Catalpa, and the beautiful Maiden-hair tree of Japan. The list might also include the Almond, Black Walnut, and various species of Sophora, Kolreuteria, Cercis, Gymnocladus, Acer, Rhus, Tilia, Liquidambar, etc. Some judgment would have to be exercised in the matter, of course, but probably all of the trees here mentioned would succeed if properly planted. . . . As regards Poplars, Ashes, Alders, Pavias, Limes, Gleditsia, Horse-chestnuts, Thorns, etc. . . . I will simply remark that these and many more can be placed in the list of trees and shrubs fit to be planted in large towns and cities; some, of course, are more fit for our cleaner and less smoky country towns, but many would resist the evil influences of a London atmosphere if properly planted and cared for." We have omitted the lists of shrubs, climbers and smaller plants which Professor Ward also gives, but may cite his mention of the fact that there was a year or two ago, a fine specimen of *Ptelea trifoliata* flourishing in the heart of the city of London on the premises of the *Times* newspaper. "Surely," he says, "after this we need not despair, and it behooves all those who are concerned in furnishing towns with those 'lungs' so necessary for prosperity in the true sense, to bestir themselves and look through the lists of likely plants." It may interest Professor Ward to know that some of the American trees he recommends flourish well in the streets of American towns.

Notes.

Messrs. Pitcher & Manda announce an exhibition of Chrysanthemums, Palms, Ferns and Orchids at the United States Nurseries, Short Hills, New Jersey, to continue during this week.

During the famine which has recently afflicted the Volga regions, in Russia, the peasants have found their chief source of subsistence in bread made from a Chenopodium, the common way-side weed which we will call Goosefoot.

Professor N. S. Shaler, of Harvard University, whose excellent book on the "Aspects of the Earth" we reviewed a year or two ago, is about to publish another, called "Nature and Man in America," which will explain in a popular form the influence that environment exerts upon man.

A correspondent deplores the popular taste which makes it possible for a boy made of Roses, Immortelles and Carnations, and trousers made of Roses and Pinks, to be among the constructions spoken of as "beautiful and numerous floral tributes" at the opening of a business house lately.

The study of plants first existed as a branch of medical knowledge. When Hippocrates, "the father of medicine," compiled a list of all medicinal plants known to him only 300 were named. In the time of Theophrastus, the famous pupil of Aristotle, some 500 species could be described, and in the first Christian century, when Dioscorides wrote, 100 more were known.

Among the new books which should interest lovers of nature we notice "Sharp Eyes," a collection of studies of insect, bird and flower-life, by W. Hamilton Gibson; "Japonica," by Sir Edwin Arnold, and "The Warwickshire Avon," by Mr. T. Quiller-Couch, illustrated by Mr. Alfred Parsons. Of the charms of the last-named two we have already spoken during their serial publication in *Scribner's Magazine* and *Harper's Monthly*.

In *Insect Life*, for October, it is stated by way of example of what may be done to mitigate insect attacks, that in the states of North Dakota and Minnesota there has been during the

present year a probable saving, from the ravages of grasshoppers, due directly to the advice of entomologists, of not less than $400,000. This saving was accomplished by fall plowing and the use of "hopper-dozers." An estimate that has been generally accepted is, that about one-tenth of the agricultural products of the United States is annually destroyed by insects.

A recent writer notes the fact that the German botanist, Dillenius, who, early in the eighteenth century, devoted himself to the study of mosses, and was the first to distinguish them from the fungi, found, in the neighborhood of Giessen, where he lived, 200 species of mosses, of which 140 were new to science, and 160 fungi, of which 90 had not previously been known.

In Mr. E. W. Hervey's "Flora of New Bedford and the Shores of Buzzard's Bay," he says of *Gaylussacia resinosa:* "A white variety of this species is occasionally brought from neighboring towns for sale, but in small quantities. A small tract of land in Berkley, about fifty feet square, has borne an annual crop of perhaps a quart of white huckleberries for forty years or more. A few bushes bearing the ordinary black huckleberry are interspersed with those bearing the white variety. The white variety has also been found in East Fairhaven."

In some notes on the Flora of the Lake Superior Region, published in recent numbers of the *Botanical Gazette*, Mr. E. J. Hill says that in Minnesota blue and red flowers are especially bright in color, while white flowers reveal, in a more or less well-marked degree, a tendency to coloration. He thinks that these facts are probably due to the clear bright weather that prevails in Minnesota, as contrasted with those neighboring regions where more moisture exists in the air, and expresses a desire that others may record their observations upon the subject.

In an article in the *Independent*, among the growing industries of Florida, that of bee-keeping is named. The profusion of flowers the year round, and the absence of winter, does away with the necessity of feeding, a matter of great expense in the north. There are now many large apiaries in the state, notably one upon the Appalachicola River, that contains 1,200 stands of Italian bees. This apiary produces about 10,000 gallons of honey per year, which is extracted and sent to market in barrels, bringing about fifty cents per gallon. Put upon the market in attractive shape, the net income might easily be increased fifty per cent.

In an article called "Does our Indigenous Flora give Evidence of a Recent Change of Climate?" published in Bulletin No. 7 of the Natural History Society of New Brunswick, Mr. J. Vroom discusses the question whether the subarctic plants of this country "have lingered here since the glaciers receded, or have once passed on in their northern migrations and been again driven southward to replace less hardy species, and whether a general movement in either direction is now going on." His conclusion appears to be, that within recent geologic times our climate has constantly improved, and that the general tendency of plant migration is steadily northward.

The frequent want of taste we display in the environment of park statues, a theme which was recently discussed at length in our editorial columns, is well illustrated by the present appearance of the Seward statue on Madison Square. The figure itself is a poor one, and rising, as it now does, from a little forest of tall, variegated, foliage plants, its aspect is nothing short of ridiculous. Not a great deal better looks the figure of Washington on the Riverside Drive, for, although here the beds of Coleus and higher plants do not immediately encircle the statue, yet, as one approaches from either direction, it seems to be rising from their midst. A comparison of these effects with that of the Webster statue in the Central Park, partially draped to its top with Japanese Ivy, instantly shows the superiority of vines in such situations.

The credit of originating what is known as the "Landscape Lawn Plan" for rural cemeteries belongs to Adolph Strauch, who was born in Germany in 1822, studied landscape-gardening, chiefly in the famous gardens of Austria, traveled widely and eventually emigrated to this country in 1851. Three years later he took charge of Spring Grove Cemetery, in Cincinnati, and, after encountering much opposition, succeeded in laying it out in accordance with his own new ideas and thereby set a pattern which has been more or less intelligently imitated all over our country, to the unstinted admiration of European visitors. It is interesting to learn, upon the authority of an address republished in one of the reports of the conventions of the American Association of Cemetery Superintendents, that Strauch "was stimulated by the glowing descriptions of Chinese cemeteries in Humboldt's 'Kosmos'" and largely owed to them the idea of introducing kindred effects into American cemeteries.

A correspondent of the New York *Sun*, writing from New Orleans, says that, "under the auspices of the State and the Louisiana Agricultural and Scientific Association, a sugar school has been established in this city, and will go into operation here next month, for the purpose of educating all who desire to take the course in the culture of cane and the manufacture of sugar from it. The school is equipped with a corps of five professors—of sugar agriculture, sugar chemistry, analytical chemistry, sugar mechanics, and sugar-making respectively. It has a plantation attached with a small sugar-house on it, but one thoroughly equipped with the latest and most improved machinery, a library containing all the books and journals on sugar, and everything necessary to teach this industry. The course will be one of two years, at the end of which time the student will be turned out a thorough sugar-maker, a chemist prepared to carry on a sugar-plantation in the most scientific manner."

Mr. J. H. Hale writes to the *Country Gentleman* that, in his opinion, the Excelsior Peach will help to extend the cultivation of Peaches at the far north. In central Connecticut, a hundred miles north of a limit of safe peach-growing on the Atlantic coast, it is possible to struggle against borers, insects, the yellows and other discouragements with fair success, but the serious obstacle in the way of profitable Peach-culture is the killing of the fruit-buds by extreme frosts in winter, so that varieties like Late Crawford give only one full crop and two partial crops in twelve years. Oldmion, Stump, Keyport, White and Smock have given three full crops and as many partial ones in the same time, while Hill's Chili and Pratt have fruited nearly every year. Hill's Chili, however, is unattractive in appearance, and the Pratt rots badly on the tree. Mr. Hale has seen Excelsior fruit in New Hampshire when there was not another Peach in all New England, and he is satisfied that it is a variety which can be trusted to bear every year. The tree is of the Hill's Chili type, although rather more dwarf in growth, but the fruit is much larger, richer and of brighter color, and without the "wool" which is so objectionable in Hill's Chili. It sells as well as the Crawford, and for family use is of better quality.

It would be hard to imagine a more charming garden-scene, or one more artistically portrayed than the Primrose-garden in Surrey, which is the subject of one of the illustrations in a recent issue of *The Garden*, of London. It represents a wood walk lined with a few picturesque Birches, under which are great masses of the Yellow Primrose in bloom; and as this plant, the true English Primrose, is hardy in our northern states, with a little protection, we can endorse the views of *The Garden* when it says that "no flower better deserves a garden to itself than the Primrose. It is so old a favorite, and has been cultivated in so many forms, that any one determined to have a Primrose-garden may choose the kind he likes best and set to work accordingly. There are the single-stalked Primroses, the earliest of all, flowering from the middle of March onward, while some may be had in bloom as soon as the end of February. They range in color from pure white to deep primrose, and from palest pinky lilac, through strong red-purples, to a color nearly approaching blue, and there are also rich reds of many shades. The grand Primroses for garden effect are the large bunch-flowered kinds, white, yellow and orange-colored, red, crimson and rich brown; of infinite variety in form, texture, habit and coloring; easy to raise to any amount by seed, as also by division of the older buds." The garden which our contemporary illustrates was formed a few years ago "by making a cutting, about seventy yards long and varying from ten yards to fifteen yards wide, through a wild copse of young Birch-trees. The natural soil was very poor and sandy so it was prepared by a thorough trenching and a liberal addition of loam and manure, which has to be renewed every year. No formal walks are made, but one main track is trodden down, about two feet wide, about the middle of the space, dividing into two here and there where a broader clearing makes it desirable to have two paths in the width. The whites and yellows are kept at one end of the garden and the reds at the other, the deepest yellows next to the reds. The white stems of the Birches and the tender green of their young leaves help to make a pretty picture, which is at its best when illuminated by evening sunlight."

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